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A NEW TREMATODE FROM THE LOON, *GAVIA IMMER*,  
AND ITS RELATIONSHIP TO *HAEMATOTREPHUS*  
*FODIENS* LINTON, 1928

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LINTON (1928) described a trematode, *Haematotrephus fodiens* (Cyclocoelidae), from the intestine and pancreas of a loon (*Gavia immer*) taken at Woods Hole, Mass. He obtained one specimen from the intestine and several from cysts in the pancreas. Although these two forms are strikingly different, he included them as morphological variations of the above species. Witenberg (1928) questioned that Linton's species belonged to the Cyclocoelidae and further commented that "the generic identification of this species remains problematical." Later, Ejsmont (1931) transferred *H. fodiens* to the genus *Diasia* Travassos (Pachytreminae: Opisthorchiidae) but did not comment on the two morphological types described by Linton.

The writer, through the courtesy of Dr. E. W. Price, of the United States Bureau of Animal Industry, obtained Linton's material for study from the United States National Museum Helminthological Collection. The material consisted of two slides, Nos. 7915 and 7916, the former containing one specimen of the "free form" and the latter two complete specimens and three fragments of the "encysted form." Linton designated No. 7915 as the type.

A study of this material shows that Linton was dealing with two distinct species rather than two morphological forms of the same species. The "free form" should be retained in the genus *Diasia* as indicated by Ejsmont, but the "encysted form" is regarded as representing a new species belonging to the genus *Amphimerus* Barker (Opisthorchiinae). In view of Linton's very brief description, both species

are described in this paper. Measurements of *D. fodiens* are necessarily based on the single specimen.

Genus **AMPHIMERUS** Barker

**AMPHIMERUS LINTONI**, new species

Synonym: *Haematotrophus fodiens* Linton, 1928 (encysted form).

*Description*.—Opisthorchiinae. With characters of the genus. Elongate trematodes about 15 mm. in length and 0.8 to 0.9 mm. in greatest width, which occurs in the region of the testes. Posterior end broadly rounded, tapering almost to a point at anterior end; body musculature feebly developed. Acetabulum weakly developed, 0.05 to 0.06 mm. in diameter, situated 1.2 to 1.4 mm. from the anterior end. Oral sucker atrophied, mouth terminal, a buccal tube 0.08 to 0.09 mm. in length leading from oral opening to pharynx. Pharynx (fig. 15, C) 0.085 by 0.056 mm.; esophagus narrow, 0.08 to 0.1 mm. long. Intestinal crura irregular and equal, parallel to sides of body and extending to posterior end. Testes in posterior end, slightly lobed, longer than wide, and 0.16 to 0.24 mm. in width by 0.30 to 0.38 mm. in length, placed either one in front of the other or slightly tandem. Vas deferens slightly sinuous, passing anteriorly and opening into the common genital pore at anterior margin of acetabulum; seminal vesicle absent. Ovary lobed, 0.11 to 0.16 mm. long by 0.32 mm. wide, median, anterior to anterior testis. Seminal receptacle oval, 0.17 by 0.73 mm., located immediately behind ovary. Mehlis' gland diffuse, in front of ovary. Uterus densely coiled, filled with eggs, extending from ovary to acetabulum and overlapping intestines, especially in its posterior extent. Vitellaria weakly developed, consisting of four to six fimbriated groups of follicles on each side; the posteriormost group is opposite the posterior testis, and the anterior group near the posterior boundary of the middle fifth of the body. The vitellaria overlap the intestine. Excretory bladder sinuous, Y-shaped, opening slightly subterminal. Eggs yellowish, 0.024 by 0.013 mm.

*Host*.—*Gavia immer* (pancreas).

*Distribution*.—North America (Woods Hole, Mass.).

*Cotypes*.—Two complete specimens, U. S. Nat. Mus. Helm. Coll. No. 7916.

*Remarks*.—*Amphimerus lintoni* is more like *A. elongatus* Gower, 1938, from ducks than any other species of the genus. Both of these species differ from all other members of the genus in that the oral sucker is completely atrophied. *A. lintoni* may be distinguished from *A. elongatus* by the testes, which are more lobed and relatively smaller in the former than in the latter. The mouth opening is subterminal in *A. elongatus* and terminal in *A. lintoni*. The vitellaria are much better developed in *A. elongatus* than in *A. lintoni*.

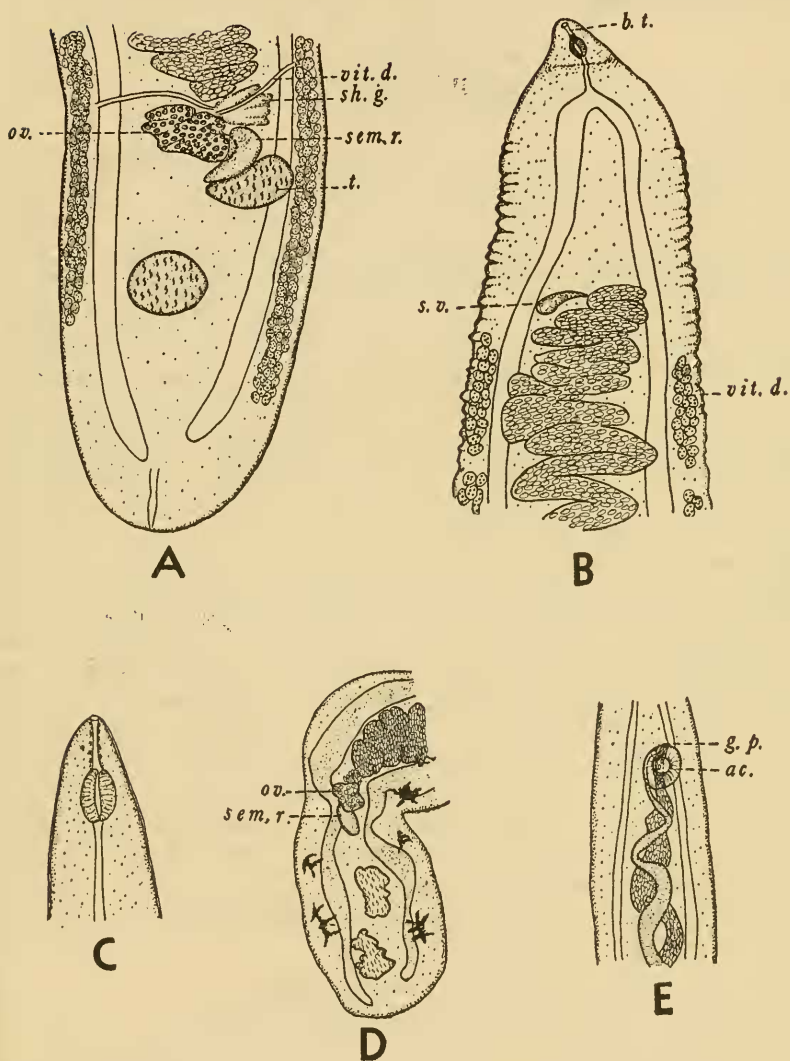


FIGURE 15.—A, *Diasia fodiens*, posterior portion showing arrangement of sex organs; B, *D. fodiens*, anterior portion; C, *Amphimerus lintoni*, new species, anterior tip; D, *A. lintoni*, posterior tip showing sex organs; E, *A. lintoni*, acetabulum and genital pore. ac, Acetabulum; b. t., buccal tube; g. p., genital pore; ov, ovary; sem. r., seminal receptacle; sh. g., shell gland; s. v., seminal vesicle; t., testis; vit. d., vitelline duct.

The total absence of an oral sucker in these two species might be considered sufficient reason for erecting a new genus, but in the absence of other differences they should be retained for the present in the genus *Amphimerus*.

### Genus DIASIA Travassos

DIASIA FODIENS (Linton, 1928) Ejsmont, 1931

Synonym: *Haematotrephus fodiens* Linton, 1928 (free form).

*Description*.—Pachytreminae. Elongate muscular worms, with sides of body more or less parallel, posterior end rounded, anterior end roughly pointed. Total length 11 mm.; greatest width 1.85 mm., near center of body. Near the genital pore the width is 1.4 mm. and at the second testis 1.68 mm. Skin aspinose. Suckers atrophied. Anterior tip of body differentiated into a triangular-shaped protrusible organ (?). Mouth opening subterminal. Pharynx pear-shaped, 0.15 by 0.24 mm. Esophagus 0.05 mm. in diameter and 0.45 mm. long, slightly sinuous. Intestinal crura relatively large, thin-walled, and reaching nearly to posterior end; not continuous. Testes entire, subspherical, slightly tandem, in posterior sixth of body; anterior testis 0.35 by 0.56 mm., posterior testis 0.40 by 0.52 mm. Seminal vesicle small, pyriform, in anterior body third, just anterior to anterior margin of uterus, slightly to left of midline; it is 0.16 by 0.58 mm. Copulatory organs absent. Ovary strongly lobed, broader than long, 0.22 by 0.70 mm., just anterior to anterior testis. Mehlis' gland anterior and to right of ovary. Seminal receptacle 0.33 by 0.83 mm., between ovary and anterior testis. Uterus extending from ovary to posterior border of anterior sixth of the body, confined within the intestinal crura, and filled with small yellowish eggs. Eggs 0.024 by 0.012 mm. Vitellaria extracecal, consisting of small spherical follicles, forming a more or less continuous line from just posterior of the anterior margin of the uterus to posterior of the posterior testis; vitelline ducts arising opposite Mehlis' gland. Excretory bladder Y-shaped.

*Host*.—*Gavia immer* (reported from intestine).

*Distribution*.—North America (Woods Hole, Mass.).

*Specimen*.—U. S. Nat. Mus. Helm. Coll. No. 7915 (type).

*Remarks*.—Two species have been described for the genus *Diasia*. Travassos (1922) erected the genus to contain the type species *D. diasia*, from the pancreas of *Plotus anhinga* in Brazil. His description of the genus is very brief. Olsen (1938) has described *D. podilymbi* from the mesenteries of *Podilymbus podiceps* from North America. He has also amended the generic diagnosis and pointed out the differences in the species.

## LITERATURE CITED

EJSMONT, LEOPOLD.

1931. Über die Identität von *Proshystera rossitensis* Korkhaus und *Tanaisia fedtschenkoï* Skrjabin, nebst einigen Bemerkungen über Trematoden mit verbundenen Darmschenkeln. Bull. Int. Acad. Polon. Sci. et Lettres, ser. B (II), 1931, pp. 531-547.

GOWER, W. CARL.

1938. Studies on the trematode parasites of ducks in Michigan with special reference to the mallard. Michigan State Coll. Agr. Exp. Stat. Mem. 3, 94 pp.

LINTON, EDWIN.

1928. Notes on trematode parasites of birds. Proc. U. S. Nat. Mus., vol. 73, art. 1, 36 pp., 11 pls.

OLSEN, O. WILFORD.

1938. A new species of trematode, *Diasia podilymbi* (Opisthorechiidae), from the pied-billed grebe, *Podilymbus podiceps* (Linn.). Journ. Parasit., vol. 24, pp. 215-218, 1 pl.

TRAVASSOS, LAURO.

1922. Informações sobre a fauna helminthologica de Matto Grosso. Folha Medica, anno 3, No. 24, pp. 187-190.

WITENBERG, GEORGE.

1928. Notes on Cyclocoelidae. Ann. Mag. Nat. Hist., ser. 10, vol. 2, pp. 410-417, 2 figs.